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HYSTERORRHAPHY.

BY

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HOWARD A. KELLY, M. D.,
OF PHILADELPHIA.



FROM
THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES,
MAY, 1888.

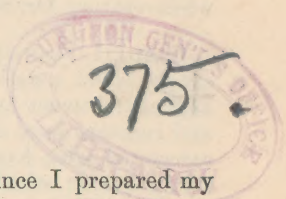
HYSTERORRHAPHY.

BY HOWARD A. KELLY, M.D.,
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MORE than a year and a half has now passed since I prepared my paper for the Philadelphia Obstetrical Society, read upon November 4, 1886, describing a new operation for the correction of certain cases of malposed uteri, to which I gave the name "Hysterorrhaphy," the essential feature of the operation consisting in the suspension, or attachment, of the misplaced uterus by means of suture, through the cornua or broad ligaments close to the uterus, in such a manner as to hold the fundus uteri permanently in ante-position. I there expressed my purpose to "formulate the rules for the adoption of a new operative procedure in the treatment of intractable cases of retroflexion, and of prolapsus uteri; the method proposed being applicable only to cases in which the local disease has rendered the patient's life miserable, and all ordinary means of relief have been found useless."

Since then a widened experience with the operation, and a careful study of a number of cases, have led me to modify some of the details, while the general principle of maintaining the uterus by means of sutures passed near the body, holding it in antefixation, remains the same. In an admirable paper by Dr. Sänger [*Centralblatt für Gynäkologie*, Nos. 2 and 3, 1888], entitled "Ueber operative Behandlung der Retroversio-flexio uteri," he clearly demonstrates the necessity of adopting some other procedure for the relief of many cases of retroverted and retroflexed uteri, than treatment by pessaries, inasmuch as the latter fails to relieve so large a number as twenty per cent. of all the cases.

He cites in this paper seven cases of his own operated upon by this method, two of which I published in my paper above referred to. [These were given me June 25, 1886, when visiting Dr. Sänger in Leipsic. Neither he nor I had then any idea that Olshausen was also interested in this subject.] In CASE I. [May 7, 1886], the retroflexion was overcome by combined action through the vagina and abdominal cavity, and the uterus then stitched to the lower part of the abdominal wound, by means of two silver ligatures passing through the right ligamentum latum, close to the cornua uteri. After recovery the uterus remained anteverted.



In CASE II. [May 13, 1886] the patient, thirty-eight years old according to my paper, twenty-eight years old according to Säger's recent account, had a retroflexion which had long been treated in vain by pessaries. At the time of the operation the uterus was stitched into the abdominal wound, as in the first case, and afterward remained anteverted.

The three following cases are related from notes kindly given to me while visiting Dr. Säger in Leipsic, in the summer of 1887.

CASE III. *Ventro-fixatio uteri. Salpingo-oöphorectomy.*—Frl. Oh., twenty-six years old, a well-built woman, has for some years been under gynecological treatment for retroflexed uterus, associated with unusually severe and constant local disturbances, increasing at the time of menstruation, associated with hysteria and various neuroses. This was one of those rare cases in which no other basis for the serious local and general psychic disturbances could be found than a mobile retroflexed uterus moderately enlarged. Treatment by pessaries did not relieve, and the constant manipulation of the organs seemed to have led the patient into habits of masturbation. She was incapable of attending even to ordinary household duties, and at the time of menstruation remained in bed on account of the profuse loss of blood, menstrual pains, and the feeling of utter weakness and mental depression. Several gynecologists had already proposed to relieve her difficulties by removal of the ovaries, or even to take out the entire uterus. To give the treatment by pessary a fair trial, Säger put the patient under chloroform, anteposed the uterus bimanually, and inserted a Thomas pessary. In two days the uterus was found again in its old position, and further treatment with other forms continued unsuccessful.

In spite also of the protracted rest from all treatment which was given the patient, the psychic disturbances grew worse and worse, she became melancholic, and repeatedly attempted suicide, for which she was finally admitted to the insane clinic of the university. Her disturbance was here considered to be of an hysterical nature depending upon pelvic disease; accordingly, Säger determined, in consultation with Professor Flechsig, to replace the uterus and attach it to the abdominal wall. The operation was performed December 4, 1886. *Three silkworm sutures were passed through the round ligaments and into the recti muscles* about three-quarters of an inch on either side of the incision. The sutures were not fastened until all had been passed. The uterus then lay close upon the base of the bladder, and so close to the abdominal wall that it was impossible for a knuckle of intestine to slip in between. During the attachment it was strongly bent ["feathered"], and was held in place with some exertion. *Tubes and ovaries were not removed*, as they were in a healthy condition. Pain was experienced for the first few days after operation, catheterization was necessary for eight days, although there was no tenesmus, and the patient left her bed in three weeks, when the pessary was removed, and the local difficulties had disappeared. A painless menstruation was established, lasting four days, with but little loss of blood, in marked contrast to the previous habit of one week. After three months the uterus was found to be normally anteverted, quite small, and quite movable in a vertical direction in spite of the lateral fixation. The patient's bodily condition has improved remarkably, and

although her nervous system has not completely recovered, she no longer requires treatment for any pelvic difficulties whatever.

CASE IV. *Epilepsy; retroflexed uterus; chronic oöphoritis. Operation: castration, and fixation of the uterus to the abdominal wall.*—Mrs. F., twenty-three years old, married seven years, sterile. Since her twelfth year she suffered from typical hereditary epileptic attacks, lasting two minutes at a time, followed by a coma lasting from two to three hours; these were increasing in frequency and violence, and were especially noticeable shortly before and after the menstrual period. She complained of constant pain in the lower part of her body, and in the sacral region of neuralgia, and very violent dysmenorrhœal pains. The family physician referred her to Sänger, under the belief that the relief of the pelvic difficulties would also influence favorably the epileptic attacks. A palliative treatment, continued for several weeks, was found to be useless. The uterus was retroflexed at an obtuse angle, but slightly movable, and both ovaries were in Douglas's cul-de-sac, swollen and very sensitive. Attempts to raise the uterine appendages failed. While the case seemed hopeless upon other grounds, the probabilities of relief through operation were good; accordingly, Sänger operated May 26, 1887, with the concurrence of Prof. Flechsig, into whose clinic the patient had first been brought. Some light adhesions were broken up, and the ovaries easily removed, and a few adhesions between uterus and rectum were separated. *Two silkworm sutures were used to attach the cornua uteri to the abdominal wound.* After knotting the sutures, a space the breadth of a finger was noticed between uterus and bladder, into which knuckles of intestine might slip, on which account the sutures were cut, and the uterus again attached somewhat below the former point, so that it now lay more closely upon the bladder. The patient suffered afterward from cramping pains and restlessness, and for a few days after the operation with attacks of apathy and hysteria. The urine was drawn for a week. The incision healed favorably, with the exception of an abscess at the lower angle.

About eight weeks after the operation the uterus was found to be normally anteverted, and very small and movable, in spite of the ante-fixation. After three months the patient was dismissed in a greatly improved condition, free from all pelvic disease. The epileptic attacks had not improved; the gain, however, by means of operation, in the relief of the local difficulties and the improvement of the hysterical attacks, as well as the generally improved condition, was great.

CASE V. *Gonorrhœal infection; adherent, retroflexed uterus, pyosalpinx, and adhesive pelvic peritonitis. Operation: salpingo-oöphorectomy; attachment of the uterus to the abdominal wall.*—This patient was operated upon, after two years of palliative treatment, on the 12th of February, 1887. Ovaries and tubes of both right and left sides were removed after separating a number of intestinal adhesions, in which they lay, encapsulated. After freeing the attachments of the uterus to the rectum, the stumps at the cornua were drawn upward, and sutured one and one-half inches above the symphysis, and three-quarters of an inch from the line of incision to the abdominal wall by means of two silver sutures passing through the points of origin of the tubes and round ligaments, and carried deeply into the parietal muscles. Into an opening which remained between the uterus and bladder a part of the descending colon became fastened, and it was necessary to cut the sutures of the left

side and at the left cornu uteri and reattach them in such a way as to diminish the opening. The patient had no urinal difficulties whatever; passing water freely from the first day. The incision healed completely and perfectly, and at the last examination, five months after the operation, the uterus was found to be anteverted, quite small, and movable. Her appearance was blooming, and she complained of no difficulties whatever. The result was in this case faultless.

In addition to these cases just cited, Sänger has, since I last saw him, operated upon two others.

CASE VI.—(November 8, 1887.) A case similar to the last, suffering from gonorrhœal infection, with disease of both appendages, and an adherent retroflexed uterus. *The uterus was fastened by means of two silver sutures, close over the bladder, to the anterior abdominal wall.* The case recovered without any unfavorable symptoms, having no trouble with her bladder, and was dismissed twenty days after the operation well, with a uterus anteflexed, small, not sensitive, and still firmly fixed to the anterior abdominal wall.

CASE VII. was a woman upon whom he had already operated, shortening the round ligaments. On the left side the tissue removed proved to be a portion of the cremaster muscle instead of the round ligament, while on the right a piece three inches long was drawn out and cut off. Inasmuch as this operation failed, and the patient insisted so earnestly upon securing some relief from her sufferings, which rendered her incapable of work, after a number of trials with various pessaries, Sänger determined upon the abdominal fixation of the uterus. Owing to the great thinness of the abdominal walls, and the readiness with which the uterus could be handled by combined manipulation, the operation promised to be one of comparative simplicity, but in this it was deceiving, as the fundus uteri was covered with intestines, and the incision had to be lengthened to about four inches, to keep the intestines away from the uterus, by means of a napkin and two sponges.

Three silkworm sutures were passed through the round ligaments, and the broad ligaments close to the sides of the uterus, and the organ thus attached to the anterior abdominal wall. The case recovered without any unfavorable reaction. The pessary which she had been wearing was removed two days before dismissal. The uterus had already grown very small, and quite movable. The fundus uteri could be seen moving through the abdominal wall. All of her difficulties had completely disappeared.

Sänger remarks, in conclusion, that all of his seven cases of ventrofixatio uteri retroflexi are cured. In the third and seventh of these operations, the procedure was one of hysterorrhaphy pure and simple, while, in the others, hysterorrhaphy was performed coincidently with the removal of diseased appendages.

The four following cases I have received from Professor Paul Zweifel, of Leipsic, through the kindness of Dr. Döderlein. The analysis speaks for itself.

CASES OF PROF. ZWEIFEL, OF LEIPSIK.

No.	Reason for operation	Nature of operation.	Sutures.	Height of attachment.	Appendages.	Result.
VIII. Sch.	Retroflexed uterus; difficulties caused by pessaries	Laparotomy and hysterorrhaphy.	Two, of silk-worm gut.	Immediately over and on both sides of the symphysis.	Not removed.	Manifestly cured only three weeks after the operation
IX. U.	Retroflexed uterus; peri- oöphoritis	Laparotomy and hysterorrhaphy	Two, of plaited silk.	Immediately over and on both sides of the symphysis.	Both ovaries and tubes removed, and stumps fastened by ligatures to the abdominal wall.	Entirely relieved of all difficulties.
X. H.	Adherent retroflexed uterus.	Laparotomy and hysterorrhaphy.	Two, of silk-worm gut.	Immediately over and on both sides of the symphysis	Nothing removed.	Entirely relieved of all difficulties.
XI. V.	Retroflexed uterus and hysteria.	Laparotomy and hysterorrhaphy.	Two, of silk-worm gut	Immediately over and on both sides of the symphysis	Nothing removed	Patient insane. Recovery from the operation No pelvic difficulties, but many general complaints.

Dr. Staude, of Hamburg, has given me the record of the following case, unpublished, in which he performed the operation of hysterorrhaphy:

CASE XII.—The patient, a married woman, forty-one years of age, had had one child sixteen years before. She came to Dr. Staude complaining of pain in the left side of the pelvis and in the ovarian region, and of much distress on sitting down. Examination revealed a uterus fixed in retroflexion. It was impossible to repose the uterus after putting the patient under an anæsthetic. As the woman was incapable of pursuing her calling, and Dr. Staude could not relieve her in any other way, he proposed releasing the adhesions by an abdominal section, and curing the retroflexion at the same time, by attaching the uterus to the abdominal wall. This operation was performed on the 12th of April, 1885, the proposition being, first, *to release the uterus, and then, after extirpating both ovaries, to attach the uterus to the anterior abdominal wall* by means of the stumps of the broad ligaments. The separation of the attached retroflexed uterus, after a carefully made incision, was not difficult. The left ovary, free and normally movable, was removed, and the left broad ligament attached, by means of the catgut ligatures binding the stump of the ovary, to the peritoneum on the left of the line of incision. The right ovary, on account of its firm adhesions in the pelvis, was so fixed that it could not be separated. This had evidently formed the chief obstruction to the attempt at reposing the uterus. Also upon raising the uterus a small fibroid tumor was found at the junction of the body with the cervix. After thus fixing the uterus to the abdominal wall, and carefully replacing the intestines, the incision was closed, and the patient made a smooth recovery. Result, from a half to one year

after the operation the uterus had remained in the position given by the operation. The pressure difficulties on sitting had completely disappeared, while the pains which were complained of, in the left lower abdominal region, still continued. An examination revealed on the left side at the painful spot no disease whatever, while, on the right side, there were marked changes, and no pain at all was complained of.

Dr. Brennecke, of Magdeburg, has given me for publication these cases, in which he performed hysterorrhaphy successfully.

CASE XIII.—In 1883 he removed a large ovarian tumor from the right side of a woman aged seventy-two, suffering at the same time from complete prolapsus uteri, occasioned by the large cyst which extended deep into the pelvis. *The stump of the right horn of the uterus was stitched into the abdominal wound for the purpose of curing the prolapsus.* During her recovery the patient was without any other disturbance than a suppuration at the lower angle of the incision. This continued to discharge for one year, after which the case remained permanently and perfectly well. The sutures used were silk prepared in iodoform.

CASE XIV. was a patient about thirty-six years of age, operated upon in the winter of 1885-86. She had a small dermoid cyst the size of a child's head in the left ovary, and suffered at the same time from prolapsus. The removal was very difficult. *Both uterine cornua were sutured to the peritoneum of the abdominal wall,* at the sides of the lower part of the incision; she had some difficulty in urinating for a short time. After a few weeks the uterus fell again, and after a few months was in as bad a condition as ever. The stump was attached directly to the abdominal wall by two sutures on one side; and on the other side two sutures encircled the round ligament. The abdominal wall was entered about a fifth of an inch in depth.

These cases Dr. Brennecke detailed to me in conversation from memory.

The two following unpublished cases of hysterorrhaphy, performed upon the retroflexed uterus, were given me by Prof. Werth, of Kiel.

CASE XV.—Patient, aged forty-one, had had five children. She suffered from retroflexed uterus and constant hemorrhages, and had had marked neurasthenia for eighteen months after a probable abortion. Menstruation was regular but profuse. For ten years past she had suffered from a descensus, for which she wore a ring pessary; this she had changed, two years previously, to a bandage with a uterine stem pessary. The retroversion was extreme, the cervix lying close behind the symphysis, the os uteri being turned completely upward, the vaginal walls were relaxed, but not prolapsed. The patient was in a wretched condition, anæmic and bleeding, and could not wait long for relief by pessaries. Operation was undertaken with the intention of removing the ovaries to check hemorrhage. *The uterus was raised and attached by the stumps of the ligaments to the abdominal wall,* just above the bladder on both sides by means of several stitches, taking especial care to sew it flat against the wall to keep out knuckles of intestine. The sutures were of silk, interrupted and dropped. After the operation, which was

upon February 14, 1887, the patient suffered from no difficulty excepting a little flatulence.

Feb. 17. Passed water herself; very slight dysuria.

21st. Retention of urine.

22d. Pain in the bladder and burning in the urethra. Clear urine drawn, urethra found strongly contracted.

27th. For a few days involuntary loss of a few drops of urine.

On March 2d, examination made, and uterus found *anteflexed* to the right and the fundus close behind the symphysis, not sensitive to pressure as before. There was nothing abnormal in the surrounding parts. After rising, slight temporary difficulty with her urine. In May a report was brought that she was "doing very well."

CASE XVI. was a woman who had borne a child fifteen years before. On February 10, 1884, Prof. Werth removed a dermoid cyst of the right ovary. The uterine body was somewhat enlarged, and adherent to the pelvis in a state of sharp-angled retroflexion. Adhesions which attached the uterus to the posterior walls of Douglas's pouch were separated, and the uterus brought into *ante-position* and attached to the peritoneum of the bladder by silk sutures—probably two. The first night after the operation the patient suffered from flatulence, but no urinary difficulty, passing water herself.

On the 15th she complained of cutting pains in the right hypogastric region and over the symphysis.

On the 3d of March examination revealed the uterus anteverted, and the fundus flattened close under the scar in the abdomen. The cervix was found far back in the pelvis. The note of March 27th states that her condition is good.

In addition to the two cases operated upon by Lawson Tait, and detailed in my first paper upon this subject, I add another quoted from Dr. Senn (*Four Months Among the Surgeons of Europe*, p. 51). After removal of both ovaries and tubes to cure the prolapsus from which the patient was suffering, "*the uterus was stitched to the inner surface of the abdominal wound.*" I am not able to make any statement as to the exact procedure or the result in this case.

In the *Pittsburg Med. Review*, vol. i., No. II., p. 280, Dr. J. R. Weist tabulates a case (No. 190) in which he attached the stump of an ovarian tumor to the abdominal wound to cure a coexisting procidentia.

Fig. 1 shows the condition of a case recently operated upon by the writer, of which fuller details will be published later. The very large fundus lies retroflexed at an acute angle on the cervix, to which it is bound by numerous adhesions. The left ovary, much enlarged, lies below this, and to this it is also attached by adhesions.

Fig. 2 shows the method of bringing the round ligament on the right side into view for the passage of the suspensory suture. The adhesions have been separated, the right and left ovaries and tubes tied off, and the fundus (*F*) raised.

In Fig. 3 the fundus (*F*) is seen as it lies in position preparatory to the tying up the two suspensory sutures (*SS*). The artery forceps are

FIG. 1

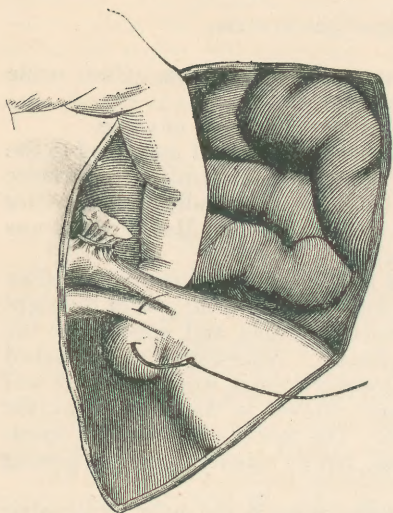


FIG. 2

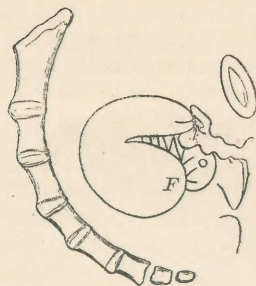
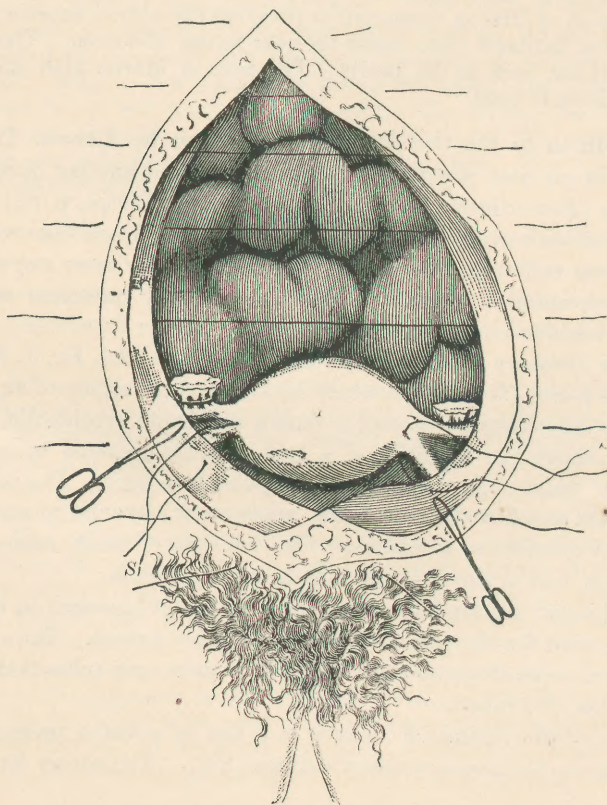


FIG. 3.



seen lying on either side evverting the peritoneum, through which each suture can be thus seen to pass. These sutures are next tied tightly and cut short and let go. The row of sutures above are then drawn up and the whole wound thus closed. It will be observed that the uterus is thus left close above the symphysis, and this was accomplished in this case without any effort at traction.

The name "hysterorrhaphy" which I adopted at the time of preparing the first paper in the Spring of 1886, is compounded of *ὑστερα*, uterus, and *ῥαφή*, a suturing, and signifies either simple plastic suture of the uterus, "rhaphe" being used as in *perineorrhaphy*, or else suturing of the uterus to something, when it is used as in *nephrorrhaphy*, fixation by suture of the floating kidney. In this latter sense I have used it. Plastic suture of the uterus alone is an operation not yet devised; when the uterus has been sutured, this has formed but a step in the course of another operation, and is not properly entitled to receive a distinctive name. "Hysterorrhaphy" might be claimed as better adapted to describe the operation upon the uterus closing the rupture occurring intra-partum, but the preliminary steps of opening the abdomen, and removing the fœtus, secundines, and blood, are far more serious than the simple suture of the tear, and the title should, therefore, be longer, and more completely descriptive. I prefer this term to gastro-hysterosynaphy, on account of the claims of euphemism, and I prefer it to longer descriptive Latin names, as more in accordance with our present customs of nomenclature.

Hysterorrhaphy is indicated,

First, in cases of the adherent retroflexed uterus, in which the patient's sufferings arise from the malposition, cases which cannot otherwise be relieved, and in which there is a fair prospect of relief by elevating and securing the permanent ante-position of the uterus.

Second, it should be adopted in all cases of simple retroflexion where treatment through the vagina fails to relieve, and there is a reasonable hope that with the cure of the retroflexion the patient's sufferings will disappear.

Third, the propriety of proposition second being granted, it is, *à fortiori*, urgent, to insure the permanent replacement of a malposed uterus, coincidentally with any other abdominal operation.

Fourth, in cases of prolapsus which cannot be cured by operation or treatment per vaginam, under the usual restrictions as to age, health, etc., hysterorrhaphy may be resorted to.

Judged by its present record, its no per cent. mortality, hysterorrhaphy is less dangerous, and more uniformly successful than the operation of shortening the round ligaments pulled out through the inguinal canal. In cases of adherent retroflexed uterus, there can be no rivalry between the methods, unless the operator will be willing to

complicate his procedure, by making an abdominal incision, and after freeing the adhesions, making two additional lateral incisions to shorten the ligaments. In prolapsus the lengthening of the round ligaments is clearly secondary to the falling of the uterus, and a result of the traction exerted by the weight of the body. The uterus, therefore, does not fall in consequence of the lengthening of the round ligaments, as must be claimed if we would support the assertion that the operation is rational because it restores the natural condition of the parts. The round ligaments are so attenuated in many of these cases that they are found with the utmost difficulty, or not at all; and even if at one time they did exert a strong influence in supporting the uterus, they are in their present condition incapable of doing more than feebly assisting in this function. I have further, already pointed out the increasing mechanical disadvantage under which the round ligaments labor as the uterus is lifted higher up and nearer to the plane of the canals in which traction is made; after it has reached a certain point, still below this level, the utmost efforts at traction not succeeding in producing any greater elevation. No operative procedure for prolapsus has yet been devised which will restore the parts to their *primitive integrity*, and all attempts are but more or less efficient *substitutes* for the natural supports. In some cases of prolapsus where the tissues still retain sufficient regenerative power, treatment from below, narrowing the vaginal outlet, holding the cervix back toward the sacrum, often conjoined with amputation of an enlarged or elongated cervix, will succeed in permanently curing the patient: but where these methods have not succeeded, hysterorrhaphy, being a procedure mechanically more efficient, and less dangerous than shortening of the round ligaments, will find its field and cure the prolapsus.

In some cases of simple retroflexion accompanied by disease of the ovaries and tubes, the displacement will be relieved by taking up as much of the slack in the broad ligaments as possible, when tying off the tubes and ovaries. It is necessary in such a case to apply the ligature very tightly and with extreme care, on account of the danger of hemorrhage from retraction of the tissues in the stump, to which the additional tension makes it liable. This method cannot often be relied upon, as the retroflexion readily recurs, for it is evident that where the uterus is only fixed by an axis passing through its transverse plane, visceral pressure on the fundus, acting with the free mobility in the sagittal plane, will readily rotate it backward, the cervix turning in the opposite direction as the fundus rolls over, without, necessarily, in the least affecting the tension on the lateral ligaments. This mechanism of the reproduction of a retroflexion I have actually observed. It becomes then evident, that as the rotation of the uterus in retroflexion is always in the sagittal plane, a slight acting force in this plane will effect more than a much

greater force working in the coronal plane, that is, its transverse axis. *Fixation in the sagittal plane is attained by hysterorrhaphy.*

The normal condition of the body of the uterus is one of mobile ante-flexion, resting on the upper and posterior surface of the bladder, rising and falling with the alternate emptying and distention of that organ. This position was given in Prof. Werth's second case, cited above, and from this successful case I formulate a rule for the performance of hysterorrhaphy where the fundus uteri is not large and heavy. A single silkworm gut suture should be passed through or around the round ligaments at the uterine insertion on either side, and through the peritoneal coat of the bladder at the point on which the uterus naturally rests, and tied. If care is taken not to grasp the bladder too much from the sides, there need be no fear of tormina as the bladder fills. This simple suture is not any more likely to prove a source of irritation to the bladder than sutures so often passed after its rupture. The relation of the uterine and vesical surfaces thus effected is intimate, exactly imitating the natural position of the uterus, and is the ideal of the operation of hysterorrhaphy.

Another of the great factors in the reproduction of retro-displacement is relaxation of the utero-sacral ligaments, allowing the lower part of the uterus to drop down toward the vaginal outlet, and thus, without any necessary displacement of the fundus, completely changing the direction of the uterine axis from ante- to retro-direction. This disadvantage must be met in any operative procedure by additional measures applied per vaginam tending to keep the cervix well back in the pelvis.

This might also be attained by an intraperitoneal suture, shortening the utero-sacral ligaments. I do not believe that these ligaments can be satisfactorily shortened from the vagina as suggested by Sanger, but rather by a plan which I have proposed, of passing a suture on either side of the rectum down in Douglas's pouch, from within outward, bridging over the laxity, entering the needle deep into the cervix at the point of their attachment on either side, and thus by two sutures, tied tight, the slack is taken up and the cervix held well back in place.

While the above *natural* method of attaching the uterus to the bladder will suffice for the simple cases, the method as previously proposed will be necessary in cases of prolapsus and in retroflexion with an enlarged fundus, or retroflexion with descensus.

In cases of adhesions, after releasing all attachments which bind the uterus down, and checking hemorrhage, the intestines should be kept out of the way by means of one or more large flat sponges, or, better still, a properly disinfected piece of cheese-cloth, when the uterus is to be brought up, and two or three sutures of silkworm or silver wire passed one below the other through each round ligament near its uterine origin, and deeply into the tissues of the abdominal wall just above the

symphysis pubis on either side of the incision, and at a distance from it about equal to half the breadth of the uterus. These sutures are left long and held in the grasp with forceps until all are passed, when they are to be tied, as recommended by Säger, who has also shown the necessity of employing a number of sutures. When the sutures are thus tied the uterus will be held snugly against the abdominal wall. That the function of the bladder is not thus seriously interfered with, is shown by the histories given, the disturbance being but temporary at the utmost. This objection I had considered previous to operating, and answered by clinical observations, when, upon making bimanual examinations, I have frequently found the bladder lying entirely to one or other side of the median line.

It is not claimed that hysterorrhaphy substitutes the natural for an unnatural position of the uterus, but that it gives the best possible equivalent, and one which, in so far as results are concerned, is often as satisfactory as the natural position. By this means prolapsus is cured, retroflexion is straightened out, and the vessels which have long been compressed and twisted are brought up to a health level, and the uterus is drained of its accumulated débris. That these remarkable results are brought about in a surprisingly short space of time, is shown by the rapid diminution in the size of the uterus in Säger's cases. Although the new position thus assumed does not possess the mechanical advantages of the healthy organ when all ordinary exertions tend to increase rather than diminish the power of resisting prolapsus or backward displacement, it yet possesses an advantage over the organ in any other than the normal position. In the new position thus given the uterus, pressure from within cannot act upon its anterior surface, and forces acting vertically downward toward the pelvic outlet are reflected off from the inclined plane of the posterior surfaces, affecting but a small area on top of the fundus; it is, therefore, but little influenced by many forces ordinarily concerned in reproducing displacement. The only disadvantage to which it is now subject, is its own weight, increased by its vis inertiae and succussion. This is controlled by an adequate number of sutures, to be increased according to the weight to be suspended.

Thus far no trouble has been experienced from, nor has any pain been occasioned by the traction necessary to bring the uterus into this position and retain it there. Dr. C. C. Lee, of New York, one of the first to appreciate a possible future for this operation, has, in conversation with the author and by letter, insisted in particular that its widest scope is in cases of retroflexion with adhesion.

Dr. Polk, of New York, proposed and tried, in two cases of retroflexion, after opening the abdomen and rectifying the flexion, to support the uterus by means of a drainage tube passing from the lower angle

of the incision into Douglas's pouch. A similar method was also practised by Dr. Klotz, as announced in the *Proceedings of the Gynecological Society*, in Dresden, of October 6, 1887. In this case, as reported by Dr. Klotz, after a complete and careful release of all adhesions of the ovaries and the tubes, one tube of an ovarian pedicle was stitched into the abdominal incision, and the uterus further supported by a drainage tube one and a half centimetres in diameter, reaching down into Douglas's pouch, where it was allowed to remain for from three to four weeks. The report is incomplete, wanting a more exact description of the methods employed. I cannot anticipate, nor does Dr. Polk himself seem to look for, any wide field of utility for this apparently simple method of support (*American Journal of Obstetrics*, October, 1887, page 1046). The ease with which the uterus, propelled by intestinal movements, assisted by the dorsal position of the patient, can slip around such a prop is but too evident; and in case of success, if the appendages had been removed, I should rather attribute the success to coincident premeditated shortening of the broad ligaments in removing the ovaries and tubes. Another serious disadvantage is the length of time necessary to retain the prop *in situ*, to insure a permanent result. If this method is to receive further trial, I would recommend, instead of the drainage tube, the use of one or two of the glass stirring rods found at chemists, which could be passed between stitches, and not in any way interfering with the proper closure, and careful suturing of the abdominal wound. Under the usual antiseptic precaution these could be left in place a long time.

In conclusion, hysterorrhaphy is only to be practised in a limited number of carefully selected cases, and, in the hands of the skilful abdominal surgeon, it will be found to be a safe procedure. It is not to be recommended in all cases of obstinate retroflexion, whether with or without adhesions. I have at present five patients under treatment, between thirty-five and forty-five years of age, who have suffered from retroflexion since girlhood. They are sterile, and for that reason come to me for treatment; the vagina is long, the uterus small, generally adherent, retroflexed; they have general pelvic tenderness, of which they complain almost constantly, subject to exacerbation at the menstrual period. In these cases, whether congenital or acquired, the condition has become a habit, and I do not believe that the simple correction of the flexion will either relieve them of their pains or cure the sterility, and I have not in any such case advised the operation. I would also hesitate very much before advising its performance in a very obese patient.

If, in time, this method shall prove acceptable, reflecting credit upon its originators, much is certainly due to Koeberlé, who, in a single case, opened the abdomen, corrected the flexion, and sutured the stumps of

the appendages into the abdominal wound. Credit is due to Olshausen and myself in independently originating and recognizing the importance of the procedure as one widely applicable; and to Säger, who has been the first to take hold of the subject and, by careful analysis, and many practical observations, place it upon the footing where it will surely command the attention of gynecologists throughout the world.

February 15, 1888.

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